

## OCE 101 – Intro to ocean engineering Spring 2010

### Overview:

This class is intended to provide you with an overview of the field of ocean engineering and how it relates to other topics in engineering and oceanographic science. The lectures will be given by several faculty members who have research expertise many areas of ocean engineering. This class is for your benefit, to help you gain an understanding of this field and make choices related to your future classes and electives. You are expected to attend class, be attentive and ask questions. Several field trips will be planned during the semester to give you a first experience with some of the topics. Grading will be based on class attendance and a term paper.

### Instructors:

Course lead – Dr. Chris Roman

Contact:

Narragansett Bay Campus  
Horn Building, rm 111  
401-874-6115  
cnr@gso.uri.edu

Lectures will be given by:

Dr. Malcolm Spaulding  
RADM Sam DeBow  
Dr. Peter Stepanishen  
Dr. Robert Ballard  
Dr. Chris Baxter

TA: Dave Hallam <hallamt1@gmail.com>

### Grading:

Attendance – 50%

You are allowed one missed class, if you have an written excuse. Attendance will be taken in class each week.

Term paper – 50%

This is a paper on an approved topic of your choice related to ocean engineering. A **250 word** abstract is due 3/11/2010 in hard copy at the start of class. This is worth 25% of the term paper grade, so take it seriously and get feedback before the final version is due. Before the 11<sup>th</sup> confirm with Dr. Roman that your topic is valid. Also, note that students with abstracts receiving a **D** or **F** grade will be required to meet with Dr. Roman for a discussion before the final paper will be accepted for grading.

The final paper, **2000-4000 words**, is due 4/22/2010 by 5:00 in Dr. Roman's office. **NO LATE PAPERS WILL BE ACCEPTED.** Final papers must include at **least 4 references** from published sources and two figures. Wikipedia and the the general internet do **NOT** count as sources. You need to follow up with an original source. If the figures are reproduced from another source, that source must be cited.

Details: This paper should address the following points:

- Identify a topic within the field of ocean engineering
- Discuss the current state of the art for this topic
- Discuss what challenges are ahead and where active work in the area is going
- Discuss the fundamental engineering and science principles required to do work or research in this area. For example is you selected Autonomous Underwater Vehicles (AUVS), you could mention and explain the relevance of – hydrodynamics, electrical systems design and computer

architectures.

- Outline a plan for selecting professional electives that would provide background for this topic

The abstract should be a complete and concise summary of what the paper will be about. It should inform the reader of the following:

- What the topic is
- What will be covered in the paper
- Why the reader should care
- What conclusion will be drawn at the end of the paper.

Complete grades will be based on the following criteria.

- Clarity of the writing and organization
- Completeness of the topic overview
- Clarity of the graphics
- Proper use of units, symbols and quantities
- Proper citations and references
- Clarity of links to a potential educational program and course selection

#### Schedule:

Date	Presenter	Misc	Location
1/28/10	Dr. Roman – Intro	-	Ranger Hall
2/4/10	-	-	<b>NO CLASS</b>
2/11/10	Dr. Robert Ballard – Ocean Exploration	-	Ranger Hall
2/18/10	Dr. Roman – Ocean robotics	-	CI auditorium
2/25/10	Dr. Stepanishen – Underwater Acoustics	-	CI auditorium
3/4/10	David Hallam – Monitor diving expedition	-	CI auditorium
3/11/10	Dr. Baxter – Marine sediments	ABSTRACTS DUE	CI auditorium
3/18/10	RADM Sam DeBow – History of Hydrography	-	CI auditorium
3/25/10	<b>SPRING BREAK</b>	-	<b>NO CLASS</b>
4/1/10	TBD	-	TBD
4/8/10	Dr. Malcolm Spaulding – Offshore Energy	-	CI auditorium
4/15/10	TBD	-	TBD
4/22/10	TBD	PAPER DUE – 5:00 pm	TBD
4/29/10	TBD	-	TBD

**To be scheduled:** These will happen this semester but the dates are not certain yet.

- Tour of a navy submarine. This will be a bus trip from Main Campus to Groton and back.
- Tour of RV Endeavor, when it returns from the ship yard in the spring.
- Tour of the URI Inner Space Center (ISC). This will happen in the spring when the Okeanos Explorer and the ISC are connected with live communications.
- Beach survey – South Kingstown Town Beach